

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

11046 U.S. PTO  
10/061477  
01/31/02

Applicant: Victor E. Braman, et. al.

Title: Sodium Carbonate Recovery From Waste Water Streams and Impounded Sodium Carbonate Decahydrate Deposits

#2

INFORMATION DISCLOSURE STATEMENT 37CFR 1.98

Hon. Commissioner of Patents  
Washington, DC 20231

Parsippany, NJ 07054

Applicant submits the references listed on attached form PTO/SB08A for consideration by the Examiner in the examination of the above-entitled application.

Referring to this prior art:

The patent to Dome (4,869,882) teaches waste recovery directly.

Copenhafer, No. 6,228,335 teaches solution mining treated with steam stripping and sequential crystallization of sodium sesquicarbonate and monohydrate.

Neuman, No. 6,251,346 teaches solution mining treated with steam stripping and deca crystallization.

Chlanda (4,584,077 granted Apr. 22, 1986) teaches water splitting which is not used in the present invention.

The following patents teach variations of steam stripping to reduce sodium bicarbonate concentration followed with sequential crystallization steps to produce sodium sesquicarbonate, sodium carbonate decahydrate and/or sodium bicarbonate. The original streams are identified as trona ore brines or mine brines, not waste streams.

Neuman	No. 5,955,043 granted Sep. 21, 1999
Zolotoochin	No. 5,624,647 granted Apr. 29, 1997
Delling	No. 5,618,504 granted Apr. 8, 1997
Copenhafer	No. 5,283,054 granted Feb. 1, 1994
Copenhafer	No. 5,262,134 granted Nov. 16, 1994
Miller	No. 3,264,057 granted Aug. 2, 1966

The following patents teach solution mining from underground disposal a technique not used in the present invention.

Frint, No. 5,192,164 granted Mar. 9, 1993

Frint, No. 5,238,664 granted Aug. 24, 1993

Frint, No. 5,262,134

Respectfully submitted

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